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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# KT5W-2P1123

KT5

CONTRAST SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
KT5W-2P1123	1017810

Other models and accessories → [www.sick.com/KT5](http://www.sick.com/KT5)



### Detailed technical data

#### Features

<b>Dimensions (W x H x D)</b>	30.4 mm x 53 mm x 80 mm
<b>Sensing distance</b>	10 mm <sup>1)</sup>
<b>Sensing distance tolerance</b>	± 3 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Light source</b>	LED, RGB <sup>2)</sup>
<b>Wave length</b>	470 nm, 525 nm, 640 nm
<b>Light emission</b>	Long and short side of housing, exchangeable
<b>Light spot size</b>	1.2 mm x 4.2 mm
<b>Light spot direction</b>	Vertical <sup>3)</sup>
<b>Adjustment</b>	Teach-in button
<b>Teach-in mode</b>	Teach-in dynamic

<sup>1)</sup> From front edge of lens.

<sup>2)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C.

<sup>3)</sup> In relation to long side of housing.

#### Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	≤ 5 V <sub>pp</sub> <sup>2)</sup>
<b>Power consumption</b>	< 80 mA <sup>3)</sup>
<b>Switching frequency</b>	10 kHz <sup>4)</sup>

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> Short-circuit protected.

<sup>7)</sup> Reference voltage DC 50 V.



<b>Response time</b>	50 $\mu$ s <sup>5)</sup>
<b>Switching output</b>	PNP
<b>Switching output (voltage)</b>	PNP: HIGH = $V_S - \leq 2$ V / LOW approx. 0 V
<b>Output current <math>I_{max}</math>.</b>	100 mA <sup>6)</sup>
<b>Input, teach-in (ET)</b>	PNP Teach: U = 10 V ... < $U_V$ Run: U < 2 V
<b>Input, light/dark (L/D)</b>	PNP Light: U = 0 V Dark: U > 10 V ... < $U_V$
<b>Retention time (ET)</b>	25 ms, non-volatile memory
<b>Time delay</b>	20 ms
<b>Connection type</b>	Male connector M12, 5-pin
<b>Protection class</b>	II <sup>7)</sup>
<b>Circuit protection</b>	$U_V$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Enclosure rating</b>	IP67
<b>Weight</b>	400 g
<b>Housing material</b>	Zinc diecast

1) Limit values when operated in short-circuit protected network: max. 8 A.

2) May not exceed or fall below  $U_V$  tolerances.

3) Without load.

4) With light/dark ratio 1:1.

5) Signal transit time with resistive load.

6) Short-circuit protected.

7) Reference voltage DC 50 V.

### Ambient data

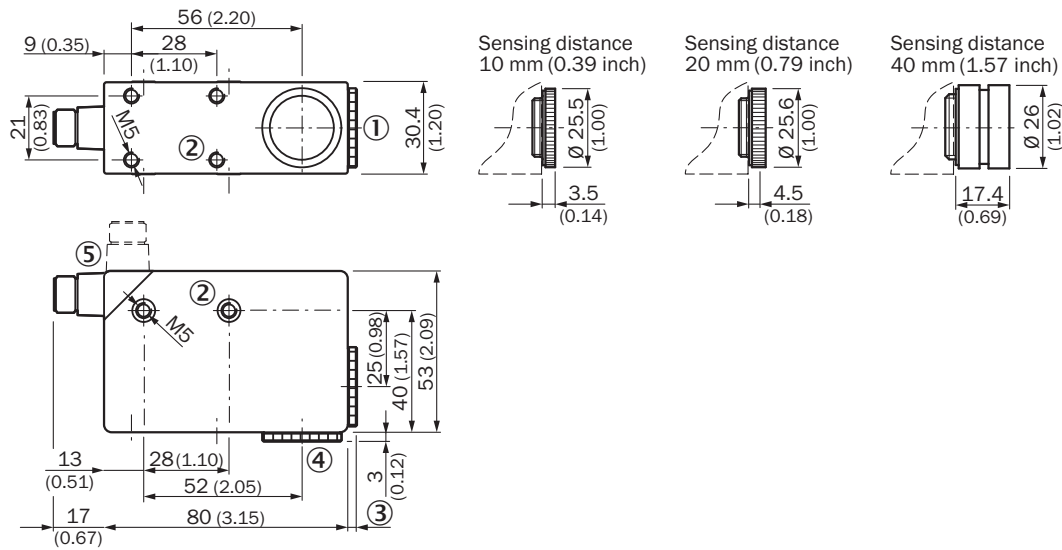
<b>Ambient operating temperature</b>	-10 °C ... +55 °C
<b>Ambient storage temperature</b>	-25 °C ... +75 °C
<b>Shock load</b>	According to IEC 60068

### Classifications

<b>ECl@ss 5.0</b>	27270906
<b>ECl@ss 5.1.4</b>	27270906
<b>ECl@ss 6.0</b>	27270906
<b>ECl@ss 6.2</b>	27270906
<b>ECl@ss 7.0</b>	27270906
<b>ECl@ss 8.0</b>	27270906
<b>ECl@ss 8.1</b>	27270906
<b>ECl@ss 9.0</b>	27270906
<b>ETIM 5.0</b>	EC001820
<b>ETIM 6.0</b>	EC001820
<b>UNSPSC 16.0901</b>	39121528

### Dimensional drawing (Dimensions in mm (inch))

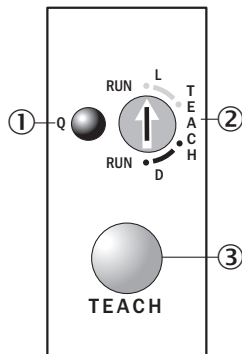
KT5-2 Teach-in, KT5-2 Display



- ① Lens (light transmission), can be exchanged for pos. 4
- ② M5 threaded mounting hole, 5.5 mm deep
- ③ See dimensional drawings of lenses
- ④ Blind screw can be replaced by pos. 1
- ⑤ Connector M12 (rotatable up to 90°)

### Adjustments

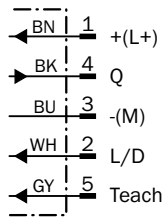
KT5-2 Teach-in, KT5W-xxx3



- ① Function signal indicator (yellow)
- ② Pre-selection switch
- ③ Teach-in button

## Connection diagram

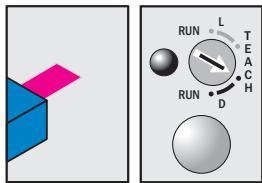
Cd-324



## Concept of operation

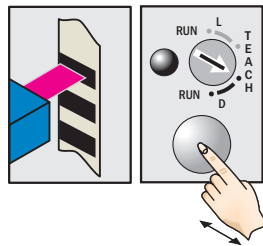
KT5-2 Teach-in, teach-in dynamic

### 1. Select switching function (light/dark)



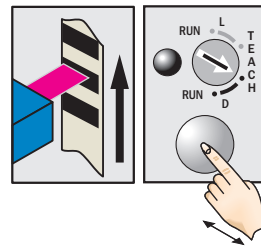
Turn rotary switch to desired teach position:  
 D = dark switching  
 L = light switching

### 2. Position mark or background

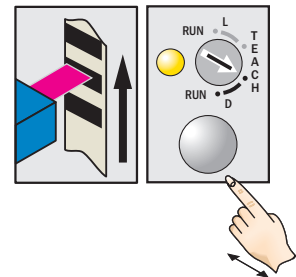


Press the teach-in button and keep it pressed.

### 3. Move at least one repeat length using the light spot

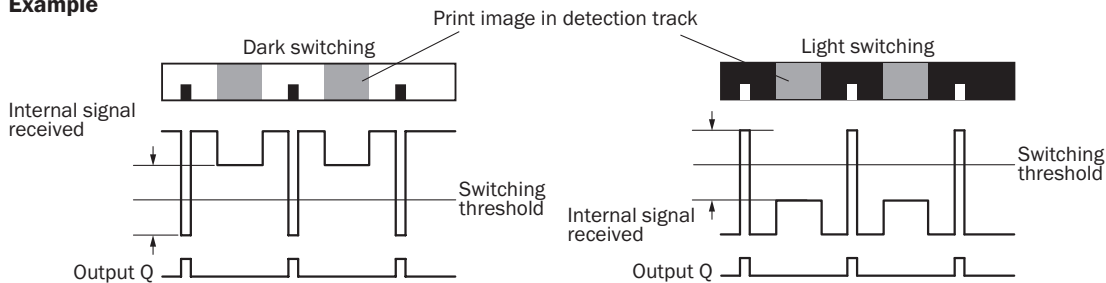


Keep the teach-in button pressed.



Release the teach-in button. Yellow LED will illuminate, when emitted light is on the mark.

## Example



## Switching characteristics

The optimum emitted light is selected automatically.

The switching threshold is set in the center between the lowest and the second-lowest reflectivity.

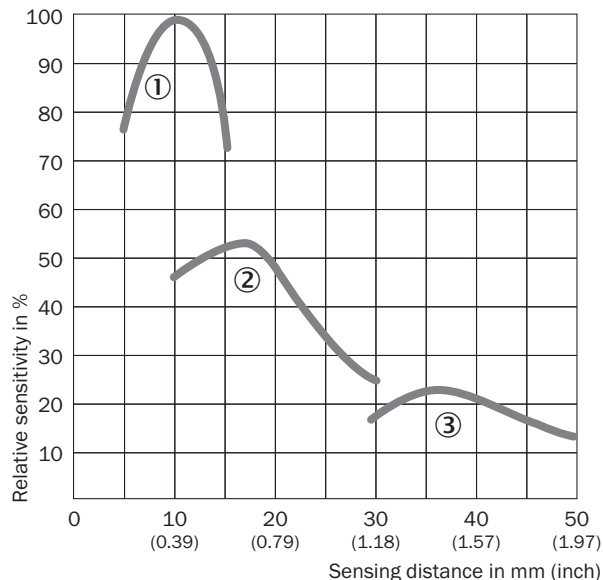
Teach-in can also be performed using an external control signal.

Light/dark setting can also be configured using an external control signal.

Observe the minimum speed (25 mm/s ... 300 mm/s).

### Characteristic curve






KT5-2 Teach-in, KT5G, KT5W, KT5-2 Display



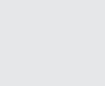






- ① Sensing distance 10 mm
- ② Sensing distance 20 mm
- ③ Sensing distance 40 mm

### Recommended accessories

Other models and accessories → [www.sick.com/KT5](http://www.sick.com/KT5)

	Brief description	Type	Part no.
<b>Universal bar clamp systems</b>			
	Plate G for universal clamp bracket, steel, zinc coated, universal clamp and mounting hardware included	BEF-KHS-G01	2022464
	Plate K for universal clamp bracket, steel, zinc coated, universal clamp and mounting hardware included	BEF-KHS-K01	2022718
	Universal clamp bracket for rod mounting, steel, zinc coated, without mounting hardware	BEF-KHS-KH1	2022726
	Mounting bar, straight, 200 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12G-A	4056054
	Mounting bar, straight, 300 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12G-B	4056055
	Mounting bar, L-shaped, 150 mm x 150 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12L-A	4056052
	Mounting bar, L-shaped, 250 x 250 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12L-B	4056053

	Brief description	Type	Part no.
<b>Plug connectors and cables</b>			
	Head A: female connector, M12, 5-pin, straight Head B: open cable ends Cable: PVC, unshielded, 2 m	DOL-1205-G02M	6008899
	Head A: female connector, M12, 5-pin, straight Head B: open cable ends Cable: PVC, unshielded, 5 m	DOL-1205-G05M	6009868
	Head A: female connector, M12, 5-pin, straight Head B: open cable ends Cable: PVC, unshielded, 10 m	DOL-1205-G10M	6010544
	Head A: female connector, M12, 5-pin, angled Head B: open cable ends Cable: PVC, unshielded, 2 m	DOL-1205-W02M	6008900
	Head A: female connector, M12, 5-pin, angled Head B: open cable ends Cable: PVC, unshielded, 5 m	DOL-1205-W05M	6009869
	Head A: female connector, M12, 5-pin, angled Head B: open cable ends Cable: PVC, unshielded, 10 m	DOL-1205-W10M	6010542
	Head A: female connector, M12, 5-pin, straight Cable: unshielded	DOS-1205-G	6009719
	Head A: female connector, M12, 5-pin, angled Head B: - Cable: unshielded	DOS-1205-W	6009720
<b>Lenses and accessories</b>			
	Lens, 40 mm sensing distance, M20 x 0.75	OBJ-210	2010945
	Lens, 10 mm sensing distance, M20 x 0.75	OBJ-211	1004936
	Lens, 20 mm sensing distance, M20 x 0.75	OBJ-212	1011506



## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

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